



A Different Divide: Teachers and Other Professionals

by Bonnie Bracey

The Digital Divide is often described as a gap in technology access between groups defined by income, race, gender, or education. But there is a different and equally significant gap: between teachers and our colleagues in other professions. While technology tools are common in the workplaces of other "workers" — such as physicians, lawyers, architects, and professors — teachers are still being denied this form of "equal employment opportunity." To this day, many teachers still don't have POTS (plain old telephone service) in their classrooms!

Dr. Frank Press, former science adviser to the president of the United States and president of the National Academy of Sciences, has written: "The technology gap between schools and the rest of the world is real and it is growing. ... The increasing pervasiveness and vitality of this technology is changing the expectations of our children and their world view. Schools of the future could look dramatically different from those we attended. ... If we bring teachers along with us and implement new technology wisely, together with other needed reforms, learning could be dramatically better."

Technology Resources for Teachers

I believe the teachers of America could not agree more. We want to learn the skills to become masters of technology in this Age of Information. We are working on the front lines of the Digital Divide and want to bring the benefits of technology to all children.

In this quest to teach using technology, I, along with many other teachers, have benefitted from the help of teacher organizations such as the National Council of Teachers of Mathematics (NCTM), the National Science Teachers Association (NSTA), the National Education Association (NEA), and other organizations with innovative technology resources, such as NASA, the National Geographic Society, and the Discovery Channel. More teachers should know about and use these opportunities. NASA was one of the first groups to really invite teachers in to consider how to shape their technology offerings. In one NASA project I did with my fourth and fifth graders called Marsville, we connected with other classrooms online to design a Marsville City.

Marsville was a project-based activity where students created a prototype habitat for Mars. The children came together to learn and build their city and make their own living spaces using a variety of interdisciplinary skills. In the process, they learned creative problem solving, cooperative learning, and data analysis. We studied the systems needed to survive on Mars. We did not just read about it, we did it! It was exciting to see how such a project engaged my immigrant students who were still learning English and motivated their reading and science learning.

Another example is the JASON Project's "Ruins, Rainforest and Reefs" from Belize. The work was so exciting, my students and I did not want to leave school while the project was going on! Together, we explored karst caves in Virginia, tropical rainforest materials, and a local zoo's Amazonia. The children wrote prolifically and created poetry and essays. We learned with experts in our own community from the Fish and Wildlife Service. We did mapping with the U.S. Geological Survey and looked at a wonderful virtual cave Web site that served as a preview to our trip to Luray Caverns. We used specialized curriculum, had online support, and engaged in real scientific exploration. The finale was a live, interactive broadcast from the Washington headquarters of the National Geographic Society.

From Chalk, Talk, and Book to Technology

In medieval times, the scribes, the careful monks who painstakingly copied books, held most of written knowledge in their

hands. In those Dark Ages, very few were privileged to be a part of the sharing of knowledge. Even after the invention of the printing press, the movement of ideas was based on a person's ability to read and to have access to books. During the time it took for literacy to increase and books to become affordable, the town crier played a key role in disseminating information.

Many teachers are not far removed from those primitive ways of communicating. Many of us are still using books for our basic teaching and our voices for delivering the instructional program. Moving from chalk, talk, and book to technology requires a transformation of our teaching. That will require ongoing support — financial, technical, and human.

The results with our students more than justify these investments. No teacher involved in the exploration, evaluation, excitement, and individualization of technology as a tool in learning can fail to see the effects on students. More information and research on learning outcomes, including recent conference papers, is available online from the U.S. Department of Education.

The following Web sites appeared in this article:

has written: www.nap.edu/readingroom/books/techgap/pdf.html

National Council of Teachers of Mathematics: www.nctm.org/

National Science Teachers Association: www.nsta.org/

National Education Association: www.nea.org/

NASA: www.nasa.gov/

National Geographic Society: www.nationalgeographic.com/

Discovery Channel: www.discovery.com/

Marsville City: www.challenger.org/tr/tr_prpro_set.htm

U.S. Geological Survey: www.usgs.gov/

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